STATE OF UTAH DIVISION OF WILDLIFE RESOURCES

CACHE VALLEY HUNTER EDUCATION 300 YARD RANGE DESIGN

MANAGED BY:

DIVISION OF FACILITIES CONSTRUCTION AND
MANAGEMENT
DFCM PROJECT # 06048520



40 W CACHE BLVD BLDG 3B LOGAN, UTAH 84341 (435) 713-9514



State of Utah-Department of Administrative Services

DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

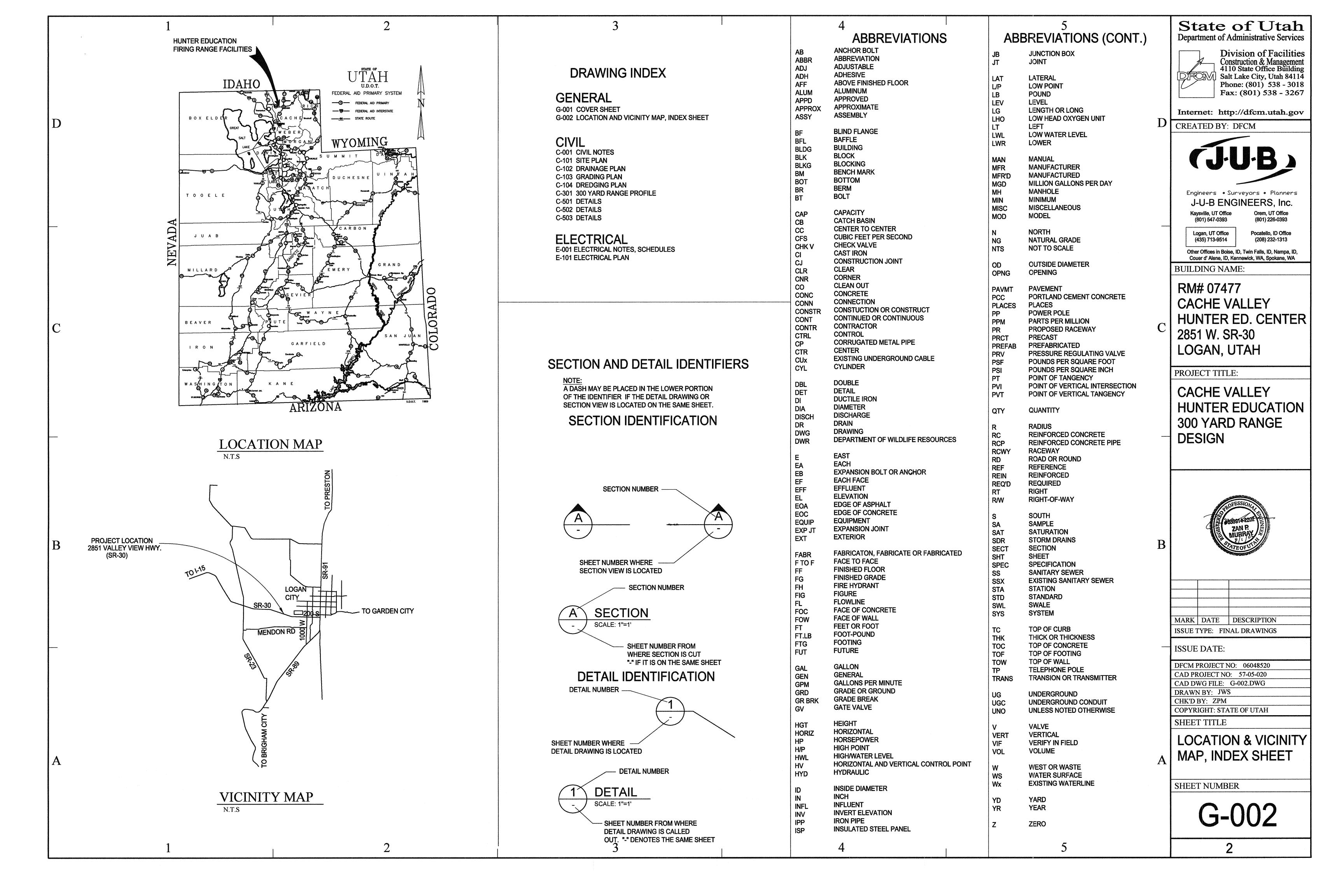
4110 State Office Building/Salt Lake City, Utah 84114/538-3018

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DFCM Date

AUGUST 2006





pedestrians in and around this work. Reference the manual on uniform traffic control devices (MUTCD latest edition for work zone traffic control). Warning and/or danger signs shall be required. Such flagmen or personnel as is necessary shall be readily available, especially when loaded or unloaded trucks- equipment are ingressing or egressing onto the job site. The contractor shall use the suggested traffic control plan, if included in plans, or submit a plan of his/her own for approval by the Engineer and/or the Owner and other regulator agencies.

4. Any work done within a public right-of-way shall be coordinated with the appropriate transportation agency and shall meet the requirements of that agency and, in particular, requirements of any right-of-way special use permit, or other permit. All work shall meet current OSHA requirements.

5. Where work is performed on easements, the contractor shall take every precaution to eliminate any adverse effects on the adjacent property and/or to restore it to its original condition.

6. All distances and data shall be checked by the contractor prior to the start of construction. In case of conflict the engineer shall be notified immediately so that clarification may be made prior to the start of the work.

7. The contractor shall be responsible for disposal and fees of all materials removed or demolished on site.

8. The Contractor shall arrange for, secure and pay for directly, any and all temporary utility supplies it may require for prosecution of its work. The cost of such utilities shall be included in the appropriate bid item with which it is associated.

9. Should construction be halted because of inclement weather conditions, the Contractor will completely clean up all areas and maintain the surface in good condition during the shut-down period. No excavation in paved streets will be allowed if weather conditions do not

permit repaying of the pipeline trench. 10. The Contractor's personnel, equipment, and operations shall comply fully with all applicable standards, regulations, and requirements of existing Federal, Utah State, and Local governmental agencies. 11. No person shall be cut off from access to his residence or place of business for a period exceeding eight (8) hours, unless the Contractor

commencing work in the area. 12. The Contractor shall preserve existing City, County, State, and Federal land monuments whenever possible. If a monument must be moved the Engineer shall be contacted 2 weeks prior to removal to arrange for relocation.

has made special arrangements with the affected persons prior to

13. The Contractor shall be responsible for obtaining all local, State, and Federal permits required for stormwater pollution prevention as a result of construction activities. When called for in the Contract Documents, the Contractor shall prepare a Stormwater Pollution Prevention Plan for approval by the Engineer. If the construction will disturb more than one acre, the Contractor shall obtain a copy of the U.S. Environmental Protection Agency's NPDES General Permit for Storm Water Discharges Associated with Construction Activity (otherwise known as the Construction General Permit or CGP) and submit a "Notice of Intent" (NOI)[EPA Form 3510-9 (6/03)] for permit coverage under the General Permit. The CGP may be found on the Internet at

http://www.epa.gov/npdes/stormwater/cgp or by contacting the U.S. EPA Office of Water directly at (800) 424-4372. The NOI may be filed delectronically at the following website:

http://cfpub.epa.gov/npdes/stormwater/enoi.cfm. The CGP does not relieve the Contractor from compliance with other regulations or contract requirements regarding stormwater pollution prevention including but not limited to: protection of surface waters, prevention of soil runoff into drains, dust control, prevention of tracking soils to adjacent streets, fuel containment, spill control, etc.

EXISTING UTILITES

1. Approximate locations of utilities are shown on the plans. They are to be used for general information only. It is the responsibility of the contractor to notify the appropriate utility companies when construction might interfere with normal operation of any utilities. It shall also be the contractor's responsibility to have the appropriate utility company field-locate any utility installations which might be affected by construction prior to beginning work in that area. The contractor shall be responsible for maintaining service of existing utilities and for restoring any utilities damaged due to construction at no additional cost to the owner. Depths and elevations of utilities are unknown unless otherwise shown. Contractor shall field verify utility depths, elevations, any discrepancies and/or conflicts shall be brought to the attention of the Engineer immediately.

INSPECTIONS AND TESTING

1. The Owner shall be responsible for all materials testing including but not limited to concrete, asphalt, compaction, sewer and water. All tests shall meet minimum Engineer requirements. See the contract documents and drawings for frequency of testing. Results are to be delivered to Special Inspector, Owner and Architect.

2. Pressure, deflection and other tests relating to pipeline installation

shall be paid for and performed by the Contractor. 3. The Contractor is responsible to coordinate with Engineer and Special Inspector for inspections of work at appropriate intervals. It shall be the Contractor's responsibility to pay for additional inspections that are the result of his workmanship.

TRENCH EXCAVATION AND BACKFILL

1. Barriers shall be placed at each end of all excavations and at such places as may be necessary along excavations to warn all pedestrians and vehicular traffic of such excavations. Lights shall also be placed along excavations from one hour before sunset each day to one hour after sunrise of the next day until such excavations are entirely refilled, compacted, and surfaced or final graded. All excavations shall be barricaded in such a manner as to prevent persons from falling, walking, or otherwise entering any excavation in any street, roadway, parking lot,

treatment plant or any other area, public or private. 2. Excavations shall be sheeted, braced, and shored as required to support the walls of the excavations, to eliminate sliding and settling and as may be required to protect the workmen, the work in progress, and existing utilities, structures and improvements. All such sheeting, bracing, and shoring shall comply with the requirements of the Utah State Industrial Commission, Occupational Safety and Health Act (OSHA), and accident prevention and safety provisions of the contract.

3. All trenches shall be kept free from water during excavation, fine grading, pipe laying and jointing, and pipe embedment operations. 4. No sanitary sewer shall be used for disposal of trench water. Surface water shall be prevented from entering trenches.

5. All backfill and compaction shall be completed within a maximum distance of 200 feet behind the end of newly installed pipe. 6. Excavation shall be not more that 200 feet ahead of the newly installed pipe. The Contractor shall restore the asphalt surface where the storm drain crosses existing asphalt.

7. The trench shall be constructed so that the horizontal pipe clearance not be less than six inches (6") on each side.

8. Gradation. Imported granular material shall conform to the following gradation specifications:

Granular Foundation Material:

See section 02060

Granular Bedding Material:

See section 02324

Granular Backfill material:

See section 02055, 02060

9. Under pavements or other surface improvements the in-place density shall be a minimum of ninety-five percent (95%) of laboratory standard maximum dry density as determined by AASHTO T-180. In shoulders and other areas the in-place density shall be a minimum of ninety-two percent (92%) of the maximum dry density as determined by AASHTO T-180. The backfill in the trenches shall be either compacted or consolidated according to the requirements of the materials being

10. Where compaction methods are used, the material shall be placed at a moisture content and un-compacted lift thickness such that after compaction the required relative densities will be produced. In no event will the material be placed in lifts which, prior to compaction, exceed eight inches (8").

PIPE-GENERAL

1. All pipe lines are to be located as shown on the plans unless relocated in the field by the Engineer to avoid unforeseen utility interference.

2. Minimum clearance between new pipelines and existing utilities and structures (except sewers) shall be two feet horizontally. 3. Contractor shall provide all necessary fittings, hardware, labor, etc. To

construct vertical and horizontal bends in pipe as needed to meet the required grade, alignment, and cover requirements. 4. For connections to existing sewer lines, contractor shall field verify all

pipe diameters, pipe materials, and appurtances for confirmation of the required fittings prior to ordering fittings. 5. Dimensions to pipelines are to centerline unless otherwise noted.

6. Distances shown along pipelines are horizontal distances and not pipe

7. Wherever the subgrade material does not afford a sufficiently solid foundation to support the pipe and superimposed load, or where groundwater must be drained, the subgrade shall be excavated to such depth as may be necessary and replaced with Gravel Foundation

8. All pipe shall be protected from lateral displacement and possible damage resulting from impact or unbalanced loading during backfilling operations by being adequately bedded.

9. Where applicable, bell holes shall be excavated so that only the barrel of the pipe receives bearing from the trench bottom.

10. In the event trench materials are not satisfactory for pipe bedding, modified bedding will be required. Modified bedding shall consist of placing compacted granular material on each side of and to the level of eight-inches (8") above the top of the pipe.

PIPE FITTINGS

1. All pipe fittings shall conform to AWWA standards. 2. All buried valves shall be installed complete with two-piece, cast iron, screw type, 5-1/4-inch shaft valve box with locking lid. The lid shall have the word "Water" cast in the metal.

3. All valve boxes in paved areas shall contain a concrete 6" thick concrete collar 24 inches larger in diameter than the valve box.

GRAVITY PIPE

1. Minimum depth of cover for sewer lines unless otherwise shown on the plans shall be four (4) feet.

2. All cpipe shall be installed accurately to the defined line and grade shown on the plans. Pipe shall be laid in a straight horizontal and contractor shall be repaired at his expense. vertical line between manholes or junction boxes.

3. Gravity pipe lines shall be tested per the specifications/codes.

MISCELLANEOUS UTILITES

1. All utility conduits shall be schedule 40 with long sweeps (36" min.). 2. All utilities shall be buried a minimum of 36 inches below finished

3. All phone and communication lines to be placed in conduit under paved surfaces unless noted on the plans

4. Direct bury telephone and communication lines shall be surrounded by 6 inches of sand.

5. A minimum clearance of 24 inches shall be maintained between

power conduits and other communication utilities. 6. Install a pull string with a 800 # capacity in all blank conduits.

EARTHWORK

1. The material shall be deposited in horizontal layers having a thickness of not more than the depth listed in the specifications prior to being compacted as hereinafter specified;

2. The moisture of compacted material shall be controlled at two percent plus or minus of the optimum moisture as determined by AASHTO

3. When the material has been conditioned as hereinbefore specified, the backfill or embankment shall be compacted as follows:

(a) Under roadways and extending one foot beyond the proposed back of walk, the fill or embankment material shall be compacted to a density equal to not less than 95% of maximum dry density as measured by AASHTO T-180.

(b) Under sidewalks and drive approaches the fill or embankment material (to at least one foot each side of the edge of the slab) shall be compacted to a density equal to not less than 95% of maximum dry density, as measured by AASHTO T-180.

(c) Other fills and embankments not listed above shall be compacted to a density equal to not less than 90% of maximum dry density, as measured by AASHTO T-180 or as noted in the specifications.

CONCRETE

1. All concrete required on this project shall be as noted in section 3300 of the project specification or other mix design approved by engineer. 2. Portland cement shall be Type II and shall comply with the Standard Specification for Portland Cement, ASTM C-150.

3. Deformed Billet-Steel Bars for Concrete Reinforcement (Grade 40 or Grade 60) - ASTM Designation A-615.

4. All bars shall be of the size specified and shall be placed in the positions shown on the Drawings in such a manner as to be firmly held during the placing of the concrete. Where not otherwise indicated minimum clearance and cover as required by the ACI 318 Code, latest

5. Metal ties or anchorages within the forms shall be equipped with cones, she-bolts or other devices that permit their removal to a depth of at least one inch without injury to the concrete.

6. All edges that will be exposed to view when the structure is completed shall be chamfered by placing molding in the forms, unless finishing with molding tools.

CONCRETE FINISH

1. All exposed vertical exposed surfaces shall receive a sack rubbed

2. All non-exposed vertical exposed surfaces shall have ties and forming devices removed and remaining holes packed with a cement mortar mix. 3. All exposed horizontal surfaces on the concrete shall be accurately screeded to grade, floated, then broom finished, unless specified

4. Joints and edges on unformed surfaces that will be exposed to view shall be chamfered or finished with molding tools. 5. Concrete shall not be mixed nor placed when the daily minimum atmospheric temperature is less than 40 degrees unless facilities are

or antifreeze compounds will not be allowed.

provided to prevent the concrete from freezing. The use of accelerators

SURFACE IMPROVEMENTS

1. The contractor shall retain and protect or remove and replace all landscaping, trees, utilities, ditches, culverts, fences, mailboxes, signs, lightpoles, headgates, existing concrete sidewalks, approaches, curb & gutter and other miscellaneous items. Any damage done by the

2. Construction of curb, gutter and sidewalk shall follow installation of storm drain/utilities improvement. Preparation of the area to be paved shall follow completion of the curb, gutter and sidewalk.

3. Sidewalk, curb and gutter, and concrete driveways shall be saw-cut vertically along the lines forming the mainline trench, in such a manner as

to not cause damage to adjoining improvements. 4. Materials used for repair or replacement of surface improvements shall be equal to or better than the material removed.

5. Where trenches are in or cross surfaced roads, traffic lanes, driveways, or parking areas, the surface shall be removed, maintained, and restored to original condition or better.

6. All edges of trenches in paved areas shall be sawcut a minimum of 6 inches wider than the width disturbed by the trench excavation prior to placing asphalt patch.

7. Stockpiled topsoil shall be placed over areas disturbed by construction

8. The Contractor shall grade the site to the finished contours shown on the Drawings. The Contractor shall run a track dozer or loader up and down the slopes to create longitudinal depressions in the finished surface to resist erosion and assist seed germination.

9. On sloping hillsides, contractor shall take precautions to mitigate possible erosion problems in the trench from storm water that might occur during or after construction.

10. The Contractor shall revegetate the areas on which topsoil has been

PAVEMENT CONSTRUCTION

1. The Contractor is responsible for the disposal of paving material to be removed from the site. The Contractor shall be responsible to obtain a site permit and any permits or other approvals necessary for disposal of the excess material.

2. The granular material shall be placed and compacted to not less than 95% maximum dry density as determined by AASHTO T-180.

3. The finished compacted pavement shall have a density of 91% minimum, (no test less than 91% of the density determined in accordance with ASTM D-2041), as determined by ASTM D2170.

The contractor is to sawcut asphalt edges immediately prior to paving or patching.

SIGNING

1. All signing to be per UDOT Specification Section 2891

2. Sign panels to be reflective sheeting on aluminum.

3. Legend to be reflective also. 4. Post to be 2" perforated 12 guage steel.

5. Install per detail on drawings.

State of Utah Department of Administrative Services



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Couer d' Alene, ID, Kennewick, WA, Spokane, WA

Pocatello, ID Office

BUILDING NAME:

RM# 07477 CACHE VALLEY HUNTER ED. CENTER 2851 W. SR-30 LOGAN, UTAH

PROJECT TITLE:

CACHE VALLEY **HUNTER EDUCATION** 300 YARD RANGE **DESIGN**



LINE LEGEND

NEW	EXISTING	
***************************************		- CENTERLINE
		PROPERTY LINE
		- EASEMENTS
4 352	4 352 	- CONTOUR
CM	CW	CULINARY_WATER
sw	SW	SECONDARY_WATER
E	E	ELECTRIC
GAS	GAS	- GAS_LINE
SS	ss	SANITARY_SEWER
SD	SD	- STORM_DRAIN
		- TELEPHONE
F		FIBER_OPTICS
—— IRR ——	IRR	- IRRIGATION
LD	LD	- LAND_DRAIN
TV	TV	- CABLE_TV
		- DITCH
		CHAINLINK_FENCE
X	X	BARBWIRE_FENCE
		GUARD RAIL
a sala manana manan		EDGE OF ASPHALT
		RAILROAD
		WATER SUPPLY (AQUACULTURE)
O2	O2	OXYGEN SUPPLY LINE

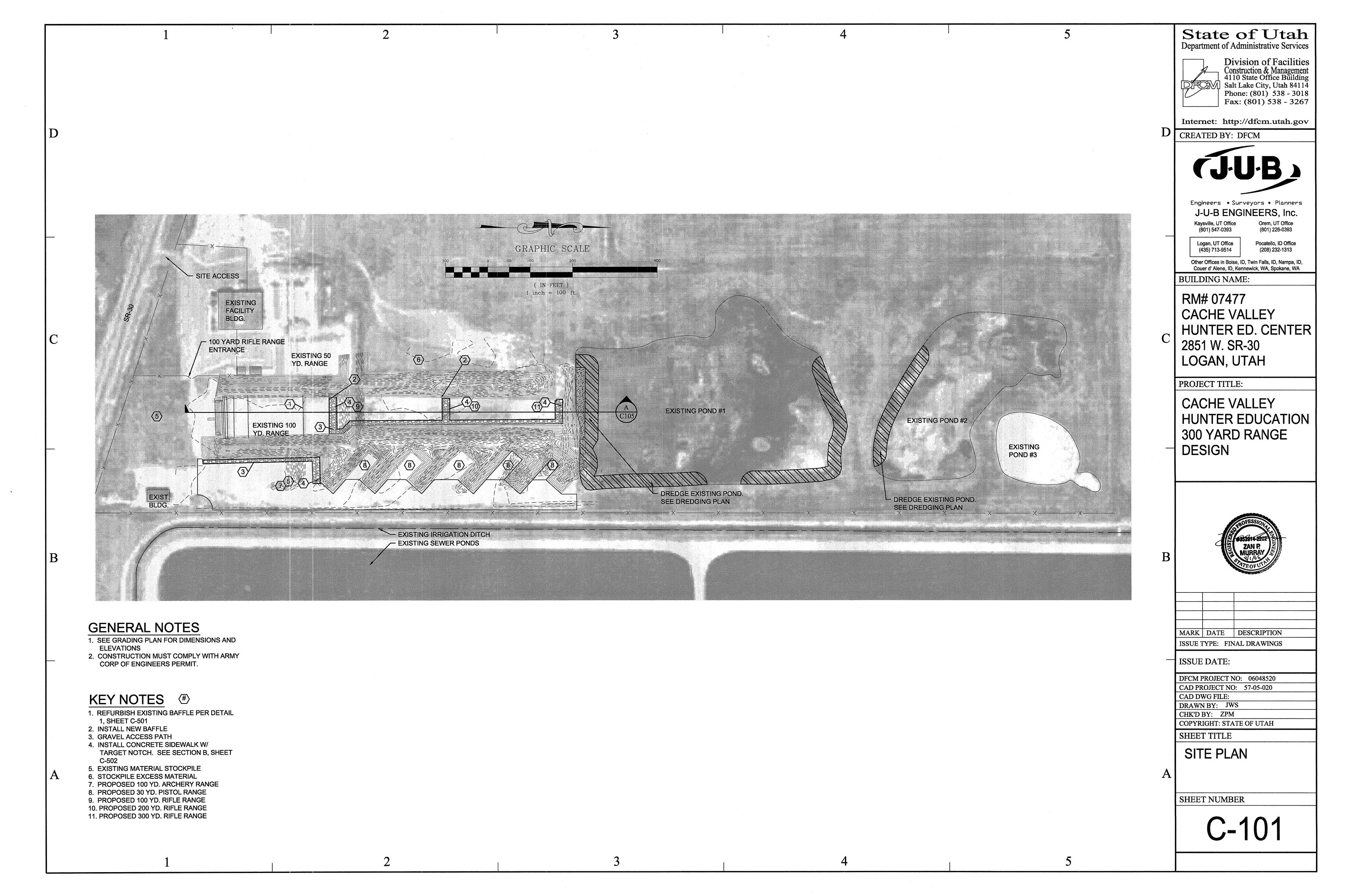
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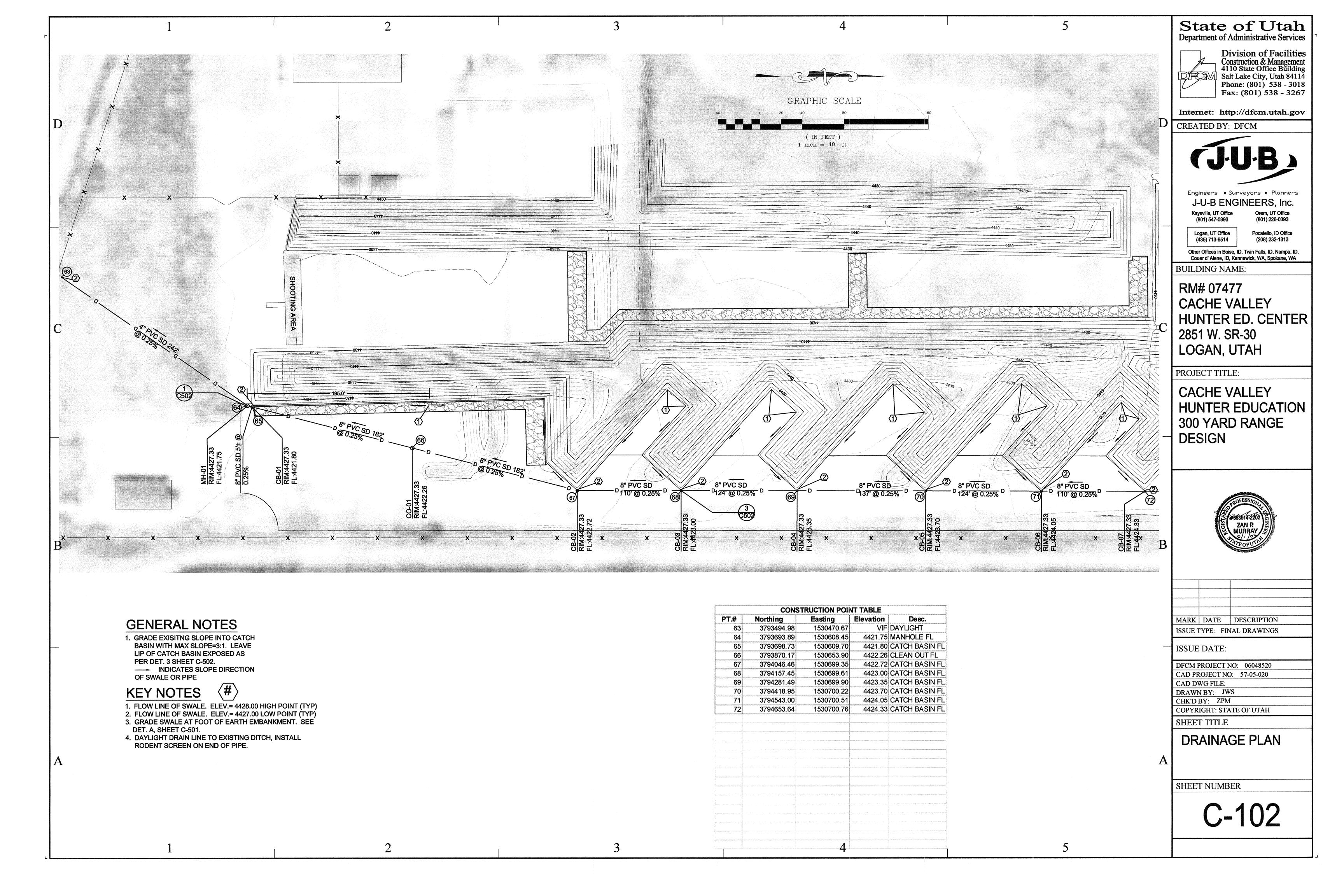
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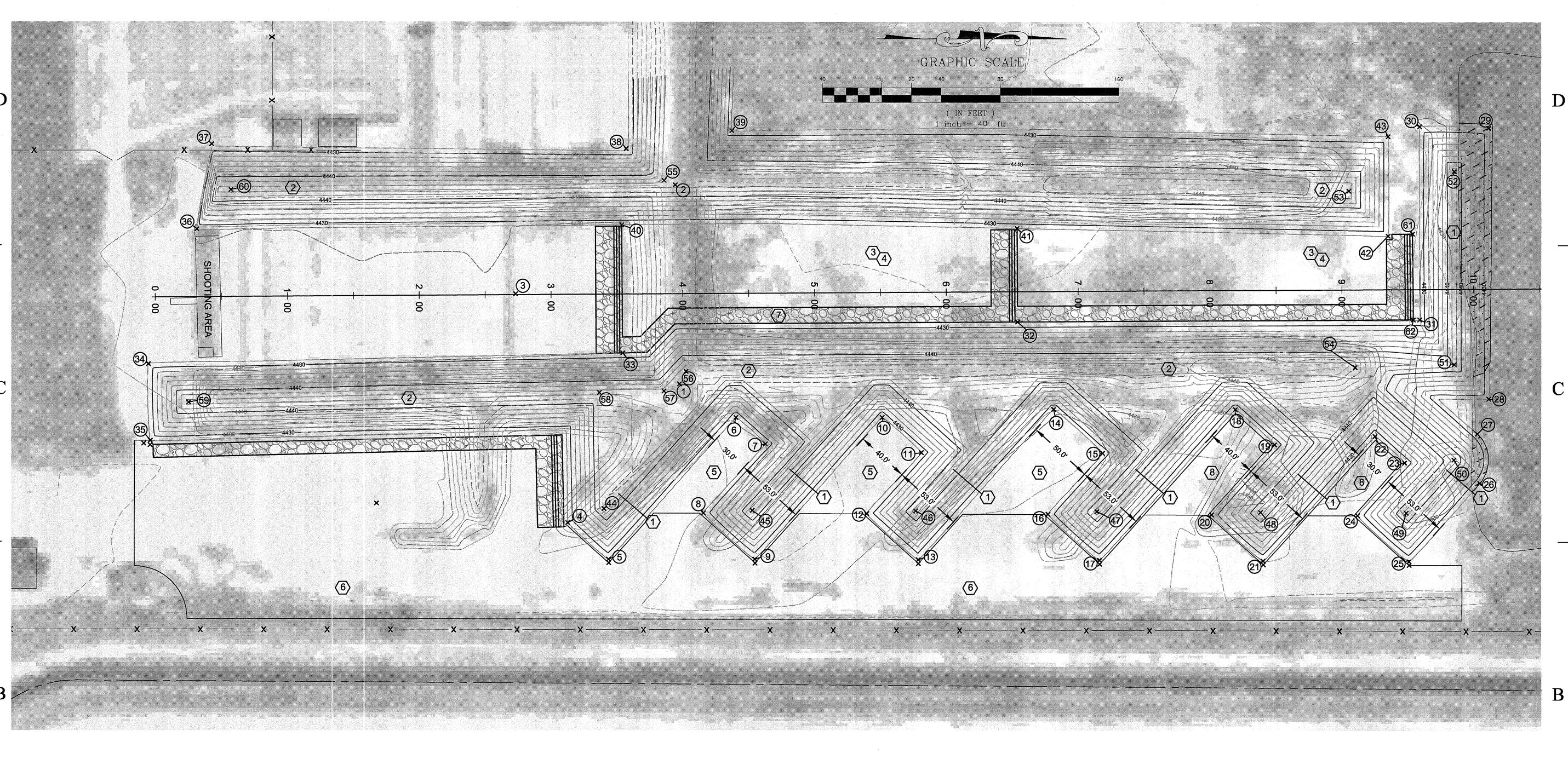
DFCM PROJECT NO: 06048520 CAD PROJECT NO: 57-05-020 CAD DWG FILE: C-001 DRAWN BY: JWS CHK'D BY: ZPM **COPYRIGHT: STATE OF UTAH** SHEET TITLE

CIVIL NOTES

SHEET NUMBER







		011/00110111 01	141 176/66	
PT.#	Northing	Easting	Elevation	Desc.
1	3794100.19	1530563.54	4446.25	JUB-CTRL
2	3794096.98	1530412.23	4446.30	JUB-CTRL
3	3793975.59	1530495.06	4428.42	JUB-CTRL
4	3794015.37	1530668.71	4428.00	BERM-TOE
5	3794046.31	1530696.53	4428.00	BERM-TOE
6	3794143.00	1530588.97	4428.00	BERM-TOE
7	3794165.31	1530609.02	4428.00	BERM-TOE
8	3794118.25	1530661.37	4428.00	BERM-TOE
9	3794157.30	1530696.47	4428.00	BERM-TOE
10	3794253.99	1530588.90	4428.00	BERM-TOE
11	3794283.74	1530615.64	4428.00	BERM-TOE
12	3794242.30	1530661.74	4428.00	BERM-TOE
13	3794281.35	1530696.83	4428.00	BERM-TOE
14	3794384.01	1530582.63	4428.00	BERM-TOE
15	3794421.19	1530616.05	4428.00	BERM-TOE
16	3794379.76	1530662.14	4428.00	BERM-TOE
17	3794418.80	1530697.24	4428.00	BERM-TOE
18	3794521.80	1530582.67	4428.00	BERM-TOE
19	3794551.55	1530609.41	4428.00	BERM-TOE
20	3794503.81	1530662.51	4428.00	BERM-TOE
21	3794542.85	1530697.61	4428.00	BERM-TOE
22	3794627.93	1530602.97	4428.00	BERM-TOE
23	3794650.24	1530623.03	4428.00	BERM-TOE
24	3794614.44	1530662.84	4428.00	BERM-TOE
25	3794653.49	1530697.94	4428.00	BERM-TOE

CONSTRUCTION POINT TABLE

CONSTRUCTION POINT TABLE					
PT.#	Northing	Easting	Elevation	Desc.	
26	3794707.09	1530638.31	4428.00	BERM-TOE	
27	3794705.37	1530600.95	4428.00	BERM-TOE	
28	3794714.08	1530574.47	4428.00	BERM-TOE	
29	3794714.08	1530368.57	4428.00	BERM-TOE	
30	3794661.61	1530367.55	4428.00	BERM-TOE	
31	3794661.64	1530514.27	4428.00	BERM-TOE	
32	3794356.75	1530516.24	4428.00	GRAVEL PATH	
33	3794057.09	1530539.88	4428.00	GRAVEL PATH	
34	3793697.49	1530548.27	4428.00	BERM-TOE	
35	3793698.84	1530606.33	4428.00	BERM-TOE	
36	3793734.04	1530445.92	4428.00	BERM-TOE	
37	3793745.37	1530381.12	4428.00	BERM-TOE	
38	3794059.65	1530384.62	4428.00	BERM-TOE	
39	3794139.83	1530370.90	4428.00	BERM-TOE	
40	3794056.27	1530442.70	4428.00	GRAVEL PATH	
41	3794356.30	1530445.34	4428.00	GRAVEL PATH	
42	3794637.64	1530450.84	4428.00	BERM-TOE	
43	3794637.64	1530375.08	4428.00	BERM-TOE	
44	3794042.85	1530658.12	4443.00	BERM-TOP	
45	3794155.32	1530659.39	4443.00	BERM-TOP	
46	3794279.37	1530659.76	4443.00	BERM-TOP	
47	3794416.83	1530660.17	4443.00	BERM-TOP	
48	3794540.88	1530660.54	4443.00	BERM-TOP	
49	3794651.52	1530660.87	4443.00	BERM-TOP	
50	3794687.57	1530620.76	4443.00	BERM-TOP	
	2				

	CONSTRUCTION POINT TABLE				
PT.#	Northing	Easting	Elevation	Desc.	
51	3794687.86	1530548.28	4443.00	BERM-TOP	
52	3794687.89	1530401.56	4443.00	BERM-TOP	
53	3794607.89	1530416.50	4445.00	BERM-TOP	
54	3794612.76	1530550.59	4445.00	BERM-TOP	
55	3794088.44	1530408.85	4445.00	BERM-TOP	
56	3794105.18	1530553.97	4445.00	BERM-TOP	
57	3794088.38	1530568.91	4445.00	BERM-TOP	
58	3794039.34	1530570.06	4445.00	BERM-TOP	
59	3793727.92	1530577.31	4445.00	BERM-TOP	
60	3793759.94	1530415.91	4445.00	BERM-TOP	
61	3794656.32	1530449.30	4428.00	GRAVEL PATH	
62	3794656.74	1530514.30	4428.00	GRAVEL PATH	

GRADING VOLUMES				
LOCATION	MATERIAL	IMPORT	VOL./WT.	CY./TON
RANGE BERMS	S2	NO	26200	CY
200/300 YD. RANGE FLOOR	S2	NO	1800	CY
ACCESS PATHWAY	A4	YES	935	TON
ACCESS PATHWAY	A2	YES	315	TON
PISTOL RANGE FLOOR	A4	YES	300	TON
PISTOL RANGE FLOOR	A2	YES	100	TON
ROADWAY GRADING	A2	YES	1315	TON
ALTERNATE #2 RANGE FLR	A4	YES	2025	TON
ALTERNATE #2 RANGE FLR	A2	YES	675	TON
RIP RAP	A3	YES	365	TON

KEY NOTES (#)

- 1. GRADE 15' TALL EMBANKMENT.
- 2. GRADE 17' TALL EMBANKMENT.
- 3. COVER AND GRADE FIRING RANGE FLOOR WITH STOCKPILED MATERIAL.
- 4. ALTERNATE #2: COVER EXISTING RANGE FLOOR WITH 12" MIN. GRAVEL TYPE A4 AND 4" TYPE A2.
- 5. MAINTAIN EXISTING RANGE FLOOR.
- 6. REGRADE AREA W/ 3" AGGREGATE A2.
- 7. GRAVEL ACCESS PATH. SEE SEC. A, SH. C-103
- 8. SEE SEC. A, SH. C-103 FOR RANGE FLOOR CONSTRUCTION.

State of Utah
Department of Administrative Services

DECM Sa

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BUILDING NAME:

RM# 07477
CACHE VALLEY
HUNTER ED. CENTER
2851 W. SR-30
LOGAN, UTAH

PROJECT TITLE:

CACHE VALLEY
HUNTER EDUCATION
300 YARD RANGE
DESIGN



MARK DATE DESCRIPTION
ISSUE TYPE: FINAL DRAWINGS

ISSUE DATE:

DFCM PROJECT NO: 06048520 CAD PROJECT NO: 57-05-020 CAD DWG FILE:

DRAWN BY: JWS CHK'D BY: ZPM

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SHEET TITLE

GRADING PLAN

A

SHEET NUMBER

C-103

